Croup #10

Arch. J. Baldwin

admitted March 15th 1819

Cynanche Trachealis

According to the Nosological arrangement of Dr. Chapman this is a disease of the Respiratory System, Agreeably to that of Dr. Cullen of the Order Phlegmasiæ, Genus the 10th and Species the 3d. He defines it, "Cynanche respiratione difficili, inspiratione stridente, voce rauca tussi clangosa, tumore nullo in faucibus apparente, deglutitione parum difficile et febre Lynscha".

It is supposed to be a disease of rather modern origin, antecedent to the period of Dr. Home & his illustrious cotemporary Dr. Cullen, its nature and history were but partially acquainted with. To the former of these Physicians the merit has been ascribed of having first distinguished and accurately described it, & termed it Suffocatio Stridula, and divided it into two Varieties, one he termed inflammatory, the other purulent. Since it has been mentioned by authors under various appellations. Dr. Cullen termed it Cynanche Tracheatis, Professor Frank Tracheitis, Dr. Michaëlis called it Angina Polyposa, or membranacia, and Dr. Darwin considered it a pleurisy of the wind pipe, In England it is vulgarly termed Croup, or the rising of the lights, & in some parts of the U. States Hives.

It attacks children of all ages from three months to five years old. But it occasionally attacks adults and children within the month. It is not supposed to be contageous, but is believed by some to be hereditary. Those who have once suffered an attack of it, are rendered more liable to it afterwards. It is sometimes Endemic, and has been known to prevail as an Epidemic, as was the case in the neighbourhood of Alexandria in the year seventeen hundred and ninety nine, when it is said to have been productive of considerable mortality. It is brought on by the same causes which induce Fever, particularly by a cold moist austere atmosphere, and sudden vicissitudes of weather and it is thought not improbable that certain states of the alimentary canal may assist in producing it. It prevails more generally in the Spring and winter, and those inhabiting marshy countries near the sea coast are thought to be more incident to it. It sometimes comes on suddenly, but it more frequently creeps on in the form of a common cold. The symptoms are sometimes constant, but they more generally remit, particularly during the day. The usual characteristic symptoms are. A short time previous to an attack, the patient

feels drowsy and inactive, the eyes are sometimes suffused, and heavy. There is a hoarseness and slight stertorous cough, which gradually increasing, acquires a peculiar shrill sound, resembling greatly the barking of a fisce. At the same time if the patient is old enough to express his feelings, he complains of a sense of tightness about the larynx generally accompanied with some degree of pain. As the disease advances a constant difficulty of breathing prevails, accompanied with a swelling of the tonsils, Uvula &c. Respiration is performed with a wheezing sound, apparently from the passage of the air being straightened. The cough is generally dry; when there is any expectoration, frequently it has either a purulent appearance, mark^d. with specks of florid blood, or seems to consist of films resembling portions of a membrane. The urine in the early stages of the disease is generally limpid, discharged in small quantities, and with difficulty, but in the progress of the disease it is discharged in greater quantity, become more turbid, and towards a favourable termination, generally deposits a copious sediment, which has been attributed to the absorption of purulent matter from the trachea. The bowels are generally costive

through the whole of the disease, and often much inflated, with these symptoms there is much thirst an uneasy sensation over the whole body, great restlessness and anxiety & frequency of the pulse, which as soon as the breathing becomes difficult is frequent, strong and hard; there is seldom any delirium, but a degree of coma frequently supervenes.

The disease generally runs its course in three or four days, but is occasionally protracted in a weak and chronic form for eight or ten days. When it terminates in death, it is generally by suffocation, induced either by spasm affecting the glottis, or by a quantity of matter blocking up the bronchia. But when it terminates in health; it is by a resolution of the inflammation, by a cessation of the spasms; and by a free expectoration of the matter exuding from the trachea. A spontaneous flow of sweat has been regarded as a chief critical symptom, Spontaneous vomiting and diarrhœa have also been attended with a mitigation of the symptoms, the same has been observed from a discharge of phlegm from the nose, and Dr. Rush remarks he has frequently seen an eruption of little red blotches bring relief. The unfavourable symptoms are, consi-

derable difficulty of breathing, great anxiety, violent fever, no expectoration, & the voice becoming more shrill. Upon dissection the trachea of those who have died of this disease exhibit different appearances. There is sometimes only a slight degree of inflammation, sometimes a thick matter resembling mucus, and occasionally a preternatural membrane lining but scarcely adhering to the trachea, and often extending beyond its bifurcation into the branches of the bronchia. In some cases there are no traces of disease of any kind to be discovered, these cases it has been supposed have terminated by spasm, the morbid excitement having transcended inflammation. The appearances of the lungs as observed by Michaelis, are also various, sometimes they are sound, sometimes slightly inflamed, at other times there is a sanious matter extravasated in different parts of them, sometimes the matter found in them is purulent, and sometimes merely a watery fluid. Polypous concretions it is said are frequently found in the vessels of the lungs, and the right side of the heart, they are supposed to be formed in articulo mortis, or immediately after death, and the reason of

their not being found in the left side of the heart has been ascribed to the collection of the blood in the right caused by the difficulty of breathing and consequent impeded circulation.

Respecting the nature of this disease Physicians have entertained a contrariety of opinion. It has been ascribed to an inflammation of the lungs. Dr. Home believed the preternatural membrane lining the trachea to be the cause of all the symptoms, he supposed this membrane to be formed from the condensation of the coagulable fluid secreted by the glands of the trachea. Dr. Michaelis coincided in opinion with Dr. Home in regarding the preternatural membrane as the cause of the disease, but maintained that the membrane was composed of lymph, instead of being concreted mucus, and is precisely of the same nature with the polypus concretions found in the heart and large blood vessels. Dr. Rush so far from considering the membrane the cause of the disease, regarded it merely as an adventitious circumstance, supervening after the disease had lasted some time. The circumstance of this membrane having existed without occasioning any symptoms croup, and the symptoms having been observed, when no membrane had been ~~formed~~ are strong objections to the opinion of Drs. Home and

Michaelis. Dr. Cullen regarded the disease as arising from an inflammation of the larynx, combined with a spasmodic constriction of the glottis. To this opinion some objections have been urged, It has been asked why the disease chiefly affects Children; and what proof there is of the spasms of the glottis. But it is obvious from the symptoms of the disease, and the appearances on dissection, that it is of an inflammatory nature during the first stage, and spasmodic in its last.

From the analogy between the symptoms of croup and acute asthma, they have frequently been confounded, indeed they have been considered by some authors as one and the same disease, but they are now generally regarded as distinct diseases, and Dr. Michaelis has offered a diagnosis between them He remarks all the convulsive affections are more violent in acute asthma than in croup, in the former also the difficulty of breathing is greater. The acute asthma makes its attack almost instantaneously, giving no warning of the approach, The croup comes on more gradually. In the acute asthma the peculiar shrillness of the voice, and the pain in the trachea increased on pressure, almost constant attendants of the croup are never observed, The pulse in the acute asthma

is small and contracted, In the croup at its com-
-mencement, hard, full & inflammatory, afterwards
soft and weak. The acute asthma has frequent
and perfect intermissions for hours and in some
instances for days, without the least sensible dis-
-charge from the trachea, and it yields to an-
-tispasmodic remedies. The croup continues or
increases without any remarkable remission
or even abatement of the symptoms. It is ac-
-companied with a discharge of mucus or phlegm
from the trachea & doesnot yield to antispasmo
-dics. Dr. Rush believe the diseases were distinct.
he terms the acute asthma, by name the Trachealis
Spasmodica, the croup he called by name the Tra-
-chealis humida.

The symptoms arising from the introduction
of extraneous bodies into the trachea are sometimes
so closely analogous to those of croup, that Phy-
-sicians have mistaken them for that disease.
Dr. Michaelis has here also given us a diagnosis
He says if the pain is seated in the trachea, or
some of its branches, and frequently changes its
place, being felt during coughing in the upper
and at other times in the lower part of the trachea
or if it occupy the trachea solely, but is ex-
-tremely acute and circumcribed the case is

not to be regarded as croup, but as arising from an extraneous body in the trachea

With respect to the treatment of the disease under consideration Physicians have entertained almost as great a contrariety of opinion as they have regarding its nature. The subject of chief controversy has been the propriety of bleeding and the extent to which it should be carried. While some have recommended bleeding ad deliquium animi; others have denounced the use of the Lancet in toto. Drs. Home, Cullen and Michaelis were decided advocates for venesection on the other hand Drs Rutty, Miller, and Dr. Rush (in his first publication) were opposed to it. The Physicians of the U.S. are less diverse in their opinion, the practice of V.S. is generally adopted. It was the practice of Dr. Baillie of New York to bleed ad deliquium animi, the same practice is pursued by Dr. Dick of Alexandria & with great success. This practice is also approved & taught by Dr. Chapman. Dr. Rush in his last treatise upon this disease (recorded in his Medical Observations & Enquiries) seems to approve of bleeding, but prefers frequent and small bleedings, to the sudden abstraction of a large quantity of blood at a time

But the advantages of copious bleeding, are now too well attested to be affected by even the opinion of Dr. Rush, it has in this as it has in all other highly inflammatory affections a decidedly more beneficial effect, than small bleedings though frequently repeated. When the disease is completely formed V.S. should constitute our chief remedy, and should precede the application of all others, But in its forming state, which may generally be known by a hoarseness and slight stertorous cough, the administration of an Emetic together with the assistance of the warm bath, will frequently arrest its further progress and render venesection, as well as the exhibition of other remedies unnecessary. When it is expedient to use the Lancet blood should be drawn from the jugular vein, especially in cases of infants, it can not only be drawn with greater facility from children from that vein than from the arm or else where, but much more suddenly & copiously, which as before remarked, is an object of primary consideration. The operation of V.S. should be performed as often as the symptoms indicate it proper. Most Physicians concur in opinion as regards the propriety & usefulness of the administration of Emetics in this disease. They should immediately succeed venesection, & be given in large and re-

=peated doses until sufficient vomiting is produced
Tart. Emet. as being an active vomit is usually pre-
=ferred, should it prove dilatory in its action the pa-
=tient should be immersed in a warm bath, this rarely
fails of having the desired effect of promoting its action
by relaxing the system, it also resolves spasm, and
produces the happiest effects & should never be
neglected. It will often be necessary to repeat the
Emetic frequently, the indications for its repetition
are, a continuance of the cough, & difficulty of breathing
They relieve these symptoms by discharging the se-
=cretions of the trachea, which consists of a thick ropy
mucous matter, by quieting irritation ~~and resolving~~
spasm. The application of blisters has been objected
to by some Physicians in this disease, but their benefici-
=al effects are now too well known to admit a sha-
=dow of doubt as to the propriety and usefulness of
their application, they should be applied upon the
throat from ear to ear, upon the breast, and in some
cases to the extremities. In urgent cases warm sti-
=mulating cataplasms may frequently be advantage-
=ously applied in their stead. I have had opportuni-
=ties of witnessing the happiest results from their
use. Should they prove beneficial in no other respect
they will by irritating the skin & thereby rendering it
more susceptible to the impression of an Epispastic. They should be com-

posed of horse radish, mustard seed, bran & vinegar made into the consistence and form of a pancake and applied to the throat as warm as the patient can bear it. In the mean time the bowels should be evacuated by some active cathartic. Rhubarb & calomel is perhaps the best, and calomel per se should be administered in large and repeated doses. Dr. Rush believes calomel in this disease to be possessed of some specific power independently of the evacuation it occasions & Dr. Hamilton of Edinburg relies almost solely upon it in the cure of the disease, he has given children at the age of two years from two to three drachms in the course of four and twenty hours & Dr Physick in one instance gave a child of three months old half a drachm in one day. It has rarely been known to cause ptyalism in children, whose ages rendered them subjects of it when given in these large quantities, probably (as Dr Rush remarks) from the circumstance of its passing quickly through the intestines. Dr. Hamiltons mode of employing it is to give a dose of from one to five grains according to the age of the child, every two hours till the breathing is evidently relieved, when it is gradually to be discontinued.

To determine to the surface of the body & to promote expectoration, diaphoretics and expectorants

should be used. Some Physicians have doubted the ben-
-eficial effects of diaphoretics in croup but experience
seems to warrant and confirm the opinion of those
who have been in favour of them, as both diaphoretics
and expectorants the antimonials, oxymel Squills, &
polygala Senega are preferable, for the application of
the last mentioned article as a remedy in this dis-
-ease we are indebted to Dr. Archer of Maryland -
it appears peculiarly adapted to this disease
the best mode of exhibiting it, is in stronger decoction in
small quantities but frequently repeated.

Inhaling the vapour arising from hot vin-
-egar and water, or warm water with the addi
-tion of a small quantity of Ether will als pro-
-mote expectoration & diaphoresis, & be found very
comforting to the patient. a very convenient way
of employing the steam is by imbuing a Sponge
with hot Vinegar & water & inhaling the vapour
arising therefrom. It will also be well for the
patient to swallow frequently some emolient
fluid as oil or mucilage.

Digitalis has been mentioned by some authors
as a remedy in this disease, and is said in some
cases to have been advantageously exhibited, but
it is now rarely administered, and I suspect justly
deserves to be exploded in this, as it has been

in many diseases, as a remedy, for which it had acquired such an unbounded reputation, we are taught that it should never be used where V.S. is expedient.

The above mentioned remedies applied as circumstances, or the often varying symptoms may indicate, constitute the practice in the early stages of Cynanche Tracheali. It now remains for me to speak of the disease in a more aggravated & protracted form. The inflammation which in the early stages had been confined principally to the larynx and upper part of the trachea, now that it has become more protracted takes deeper root, affecting the whole of the trachea, bronchia and sometimes the substance of the lungs. The patient is seized with violent spasms, alternating frequently with the lungs & trachea, producing at one time the sensation of an insupportable weight upon the chest, at others that of immediate suffocation, the trachea becomes loaded with a viscid phlegm, the lungs are engorged, there is a hoarse stridulous voice and dry cough, fever, great restlessness and an appearance of indiscribable wretchedness over the whole body without the evidence of much positive pain the circulation is impeded, the countenance wild and haggard, & the pulse full & labouring. These

symptoms would seem to call loudly for the lancet, but from the circumstance of the concentrated state of the blood in the lungs & other large viscera venesection must be performed with caution, as we are taught the sudden abstraction of a large quantity of blood under these circumstances would very probably prove fatal. Bleeding is requisite, but the blood should be drawn in small quantities & frequently repeated & its effects upon the system attentively observed. Blisters should be applied extensively over the chest, or as they produce their effects more immediately, rubefacients or cloths wrung out of hot spirits, Lpt of Terebinth or Tinct of Cantharides may be applied in their stead. Emetics & the warm bath are also beneficial in this stage of the disease. The diaphoretics and expectorants already mentioned should here also be exhibited and calomel should be given in large and often repeated doses, it is given with a triple view viz to evacuate the intestines, to promote expectoration & induce ptyalism. I have known my preceptor in this stage of the disease administer ten grains of calomel every two ~~days~~ hours for two days successively, then to continue it in diminished doses until complete ptyalism was induced, the occurrence of which he considered

almost invariably indicative of a happy termination of the disease. Though this stage of the disease is evidently ~~spasmodic~~ spasmodic, the efficacy of antispasmodics does not appear ~~well~~ to be well attested. I have myself had opportunities of witnessing their exhibition in this stage of croup, and except when administered in the form of Enema I have never observed the least sensible good effects from them, but when exhibited in this form I have known the most happy effects result from them, and have been not a little surprised that authors have not more strenuously urged their application. A solution of asafoetida I have usually seen prepared for the above purpose. Injections of Spt. of Turpentine sufficiently diluted and combined with the yolk of an egg will also be productive of good effects. Topical bleeding from the throat and chest is advised, and will frequently be found beneficial, especially where venesection is indicated but the system is too much exhausted to justify the operation. What would be the effects here of dry cupping as has been recommended in Phthisis Pulmonalis? The antiphlogistic regimen should be strictly observed through the whole course of the disease (except as to the application of cold)

the patient should be kept warm, and it will be prudent in cases of infants to keep them in an elevated posture to guard against suffocation

When the symptoms continue notwithstan=ding the application of the above mentioned re=medies; Bronchotomy has been recommended as a dernier resort, Michaelis warmly advocates it he recommends it in all cases where the symp=toms do not readily yield to other remedies, But the propriety and usefulness of the operation is questioned by others, they say although the upper part of the hardened membranous sub=stance might be extracted, still it would be impossible to remove the fluid portion which fills the lower part of the trachea and which is one of the chief obstacles to respiration, The operation has never to my knowledge been per=formed in the United States, and I believe when the remedies mentioned are judiciously and energetically applied, the formation of the mem=brane is a rare occurrence -